

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-15 (canceled).

Claim 16 (new): A recombination device for catalytic recombination of reaction gases in the form of hydrogen and/or carbon monoxide with oxygen in a gaseous mixture, comprising:

a housing through which the gaseous mixture flows; and

at least one catalyst system having a first sub region and a second sub region located within said housing;

said first sub region including:

a first catalyst body positioned within said housing to receive said gaseous mixture; and

a retarding layer surrounding said first catalyst body, said retarding layer inhibiting diffusion of the reaction gases; and

said second sub region including:

a second catalyst body positioned in the flow direction after said first catalyst body, the reaction gases having direct access to said second catalyst body.

Claim 17 (new): The recombination device according to claim 16, wherein said second catalyst body has a higher catalytic activity than said first catalyst body.

Claim 18 (new): The recombination device according to claim 16, wherein the second catalyst body comprises a plate-shaped sheet metal carrier coated with a catalyst material.

Claim 19 (new): The recombination device according to claim 18, wherein the catalyst material contains a catalytically active precious metal.

Claim 20 (new): The recombination device according to claim 19, wherein the precious metal is selected from the group consisting of platinum and palladium.

Claim 21 (new): The recombination device according to claim 16, wherein said retarding layer is a porous layer of a bulk material.

Claim 22 (new): The recombination device according to claim 16, wherein said retarding layer is deposited as a porous cover layer onto the first catalyst body.

Claim 23 (new): The recombination device according to claim 16, wherein a plurality of identical catalyst systems are positioned parallel to each other.

Claim 24 (new): The recombination device according to claim 23, wherein the catalyst systems are plate-shaped and positioned less than 20 mm apart, and wherein each catalyst system has a total maximum thickness of 1 cm.

Claim 25 (new): The recombination device according to claim 24, wherein the thickness of each catalyst system is 0.3 mm.

Claim 26 (new): The recombination device according to claim 16, further comprising an up-current protection device receiving the gaseous mixture before said mixture impinges on said catalyst system, said up-current protection device ensuring a homogeneous recombination.

Claim 27 (new): The recombination device according to claim 16, further comprising a down-current protection device positioned after the gaseous mixture traverses said catalyst system, said down-current protection device protecting against a change in flow direction inside the recombination device.

Claim 28 (new): A method for catalytically recombining reaction gases in the form of hydrogen and/or carbon monoxide with oxygen in a gaseous mixture, comprising the steps of:

flowing the gaseous mixture through at least one catalyst system including a first sub region and a second sub region in the flow direction of the gaseous mixture, said first sub region having a first catalyst body and a retarding layer, and said second sub region having a second catalyst body;

in said first sub region, catalytically recombining the reaction gases on the first catalyst body, inhibiting diffusion of said gases, and limiting catalytic recombination of said gases to produce a gaseous mixture with a reaction concentration below the ignition concentration;

flowing said gaseous mixture having a reaction concentration below the ignition concentration into the following second sub region; and

in said second sub region, catalytically recombining the reaction gases on the second catalyst body, said second catalyst body being directly accessible to the gaseous mixture.

Claim 29 (new): The method according to claim 28, further comprising the step of reducing the hydrogen content of the gaseous mixture in the first sub region through oxidation to less than 5% by volume.

Claim 30 (new): The method according to claim 28, further comprising the step of guiding the gaseous mixture through the retarding layer.

Claim 31 (new): The method according to claim 28, further comprising the step of guiding the entire gaseous mixture along the retarding layer.

Claim 32 (new): The method according to claim 28, wherein the reaction temperature in the first sub region is lower than the reaction temperature in the second sub region.

Claim 33 (new): The method according to claim 32, wherein the reaction temperature in the first sub region is lower than 560°C.

Claim 34 (new): The method according to claim 32, wherein the reaction temperature in the second sub region is higher than 560°C.

Claim 35 (new): The device according to claim 16, further comprising a teflon coating surrounding the retarding layer, said teflon coating preventing adsorption of water generated by the reaction gases within the retarding layer.